



CULTURAL RESOURCES SURVEY STAGE IA WORK PLAN REMEDIAL INVESTIGATION/FEASIBILITY STUDY NEWTOWN CREEK

Prepared by

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LIST OF ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition
ACHP	Advisory Council on Historic Preservation
AOC	Administrative Order on Consent
APE	Area Of Potential Effects
ARAR	Applicable or Relevant and Appropriate Requirement
CFR	Code of Federal Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	Constituent of Potential Concern
CRS	Cultural Resources Survey
FS	Feasibility Study
HASP	Health and Safety Plan
LPC	Landmarks Preservation Commission
MOA	Memorandum of Agreement
NHPA	National Historic Preservation Act
NPS	National Park Service
National Register	National Register of Historic Places
NYC	New York City
NYCDEP	New York City Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
NYSHPO	New York State Historic Preservation Office
QA	Quality Assurance
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SHPO	State Historic Preservation Office
SMIA	Significant Maritime and Industrial Area
SPHINX	State Preservation Historical Information Network Exchange
USEPA	United States Environmental Protection Agency

1 INTRODUCTION

This Cultural Resources Survey Stage IA Work Plan (CRS Work Plan) presents the activities required for a Stage IA survey as described in the Newtown Creek Remedial Investigation/Feasibility Study (RI/FS; AECOM 2011). This work is being performed under an Administrative Order on Consent (AOC) between the Respondents to this AOC and the United States Environmental Protection Agency (USEPA) in the USEPA *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)* program. The CRS and subsequent cultural resources work as described in Section 3, fulfills the requirements of Section 106 of the National Historic Preservation Act and applicable state and local cultural resources laws.

The RI/FS Study Area is defined in the AOC as Newtown Creek and its tributaries (Dutch Kills, Maspeth Creek, Whale Creek, East Branch, and English Kills), an approximate 3.8-mile reach (Figures 1-1 and 1-2) to the high water mark.¹

This CRS Work Plan provides the following:

- The regulatory framework for the CRS
- The objectives of the CRS Stage IA Survey
- A description of the activities that will be conducted as part of the CRS Stage IA
- A summary of the reporting and potential next steps following this survey

¹ The Newtown Creek Superfund Site Study Area is described in the AOC as encompassing the body of water known as Newtown Creek, situated at the border of the boroughs of Brooklyn (Kings County) and Queens (Queens County) in the City of New York and the State of New York, roughly centered at the geographic coordinates of 40° 42' 54.69" north latitude (40.715192°) and 73° 55' 50.74" west longitude (-73.930762°), having an approximate 3.8-mile reach, including Newtown Creek proper and its five branches (or tributaries) known respectively as Dutch Kills, Maspeth Creek, Whale Creek, East Branch, and English Kills, as well as the sediments below the water and the water column above the sediments, up to and including the landward edge of the shoreline, and also including any bulkheads or riprap containing the waterbody, except where no bulkhead or riprap exists, then the Study Area shall extend to the ordinary high water mark, as defined in 33 CFR §328(e) of Newtown Creek and the areal extent of the contamination from such area, but not including upland areas beyond the landward edge of the shoreline (notwithstanding that such upland areas may subsequently be identified as sources of contamination to the waterbody and its sediments or that such upland areas may be included within the scope of the Newtown Creek Superfund Site as listed pursuant to Section 105(a)(8) of the CERCLA).

The CRS Work Plan is divided in into seven sections. Following this introductory section, Section 2 provides the background on the Study Area, RI/FS goals and objectives, and the scope and objectives of the CRS. Section 3 provides the regulatory framework under which the CRS is conducted and the general process for a CRS. Section 4 details the activities that will be conducted to fulfill the requirements of the Stage IA Survey. Section 5 discusses how the results of the survey will be reported as well as potential additional activities that may be required as a result of the findings of the CRS Stage IA. Section 6 describes the roles and responsibilities of those involved in the CRS, and the schedule for the CRS. References are listed in Section 7.



Figure 1-1
Location Map
Cultural Resources Survey Work Plan
Newtown Creek RI/FS

Q:\Jobs\110782-01 NewtownCreek\Maps2011 Plans\AQ Figure X Study Area Location.mxd Hudson 8/11/2011 8:47:53 AM

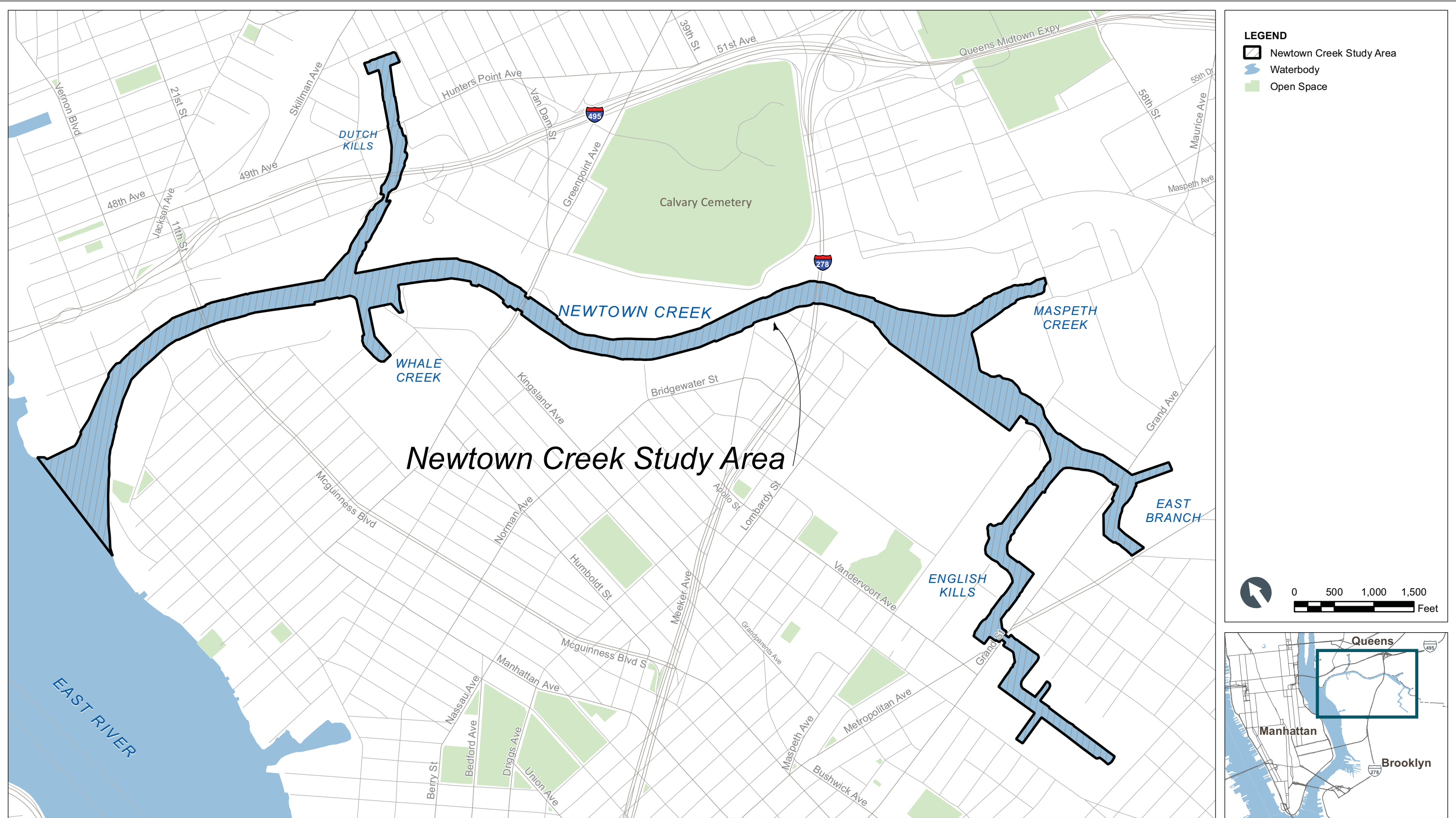


Figure 1-2
Study Area Location
Cultural Resources Survey Work Plan
Newtown Creek RI/FS

2 STUDY AREA AND RI/FS OVERVIEW

This section describes the Study Area history, provides a summary of the RI/FS objectives, and presents the objectives and scope of the CRS Stage IA. Additional information on the RI/FS is provided in the RI/FS Work Plan (AECOM 2011).

2.1 History

The earliest archaeological sites in the northeastern United States dates to the late Pleistocene, perhaps as early as 12,500 years ago. However, the earliest sites in Long Island primarily date to the later Archaic period, around 4,000 years ago. Most archaeological sites in the area can be attributed to the Transitional or Woodland cultures, which date from about 3,000 years ago to Euroamerican contact. Late Woodland peoples are believed to be the ancestors to ethnographically described Algonkian-speaking tribes.

The Newtown Creek area of Brooklyn and Queens has a history of extensive industrial development stretching back to the 1800s. This development resulted in major reworking of the banks and channel for drainage, municipal discharges, and use for navigation purposes. The channelizing and deepening of Newtown Creek and its tributaries was largely completed to its current configuration by the 1920s and 1930s. This historical development has resulted in changes in the nature of Newtown Creek and its tributaries from a natural drainage condition to one that is largely governed by engineered and institutional systems. Currently the predominant land use around Newtown Creek and its tributaries includes industrial, manufacturing, transportation, and utility facilities. The majority of land around Newtown Creek and its tributaries is designated by New York City (NYC) as one of NYC's six Significant Maritime and Industrial Areas (SMIAs). NYC's designation of the area around the Study Area as a SMIA reflects NYC's determination that the anticipated future uses of surrounding property include maritime industrial uses as well as other compatible industrial uses.

2.2 RI/FS Goals and Objectives

The goal of the RI/FS is to conduct a scientifically sound, comprehensive investigation of the Study Area following the appropriate USEPA and New York State Department of Environmental Conservation (NYSDEC) guidance documents and the principles outlined in

the USEPA *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (USEPA 2005) for the purpose of providing the basis for sound scientifically based decisions on the future condition of the Study Area. The following specific objectives have been established to achieve this goal:

1. Identify, quantify, and understand the vertical and horizontal distribution of constituents of potential concern (COPCs) in sediment and surface water, and other constituents and stressors that may impact the ecology and quality of the Study Area sediment, water, and biota. This will include a complete characterization of substances on the Target Compound List in the Study Area, notwithstanding whether the initial release included petroleum or any other substance. The synergistic relationships among substances will be considered to the extent necessary for such characterization.
2. Identify and quantify significant loadings of COPCs and, to the extent of the available information, sources of such loadings to the Study Area surface water, sediments, groundwater, and biota. In the case of ongoing upland sources, refer future investigation of sources to the appropriate regulating agency (i.e., the USEPA, the NYSDEC, or the NYC Department of Environmental Protection [NYCDEP]). For more details on evaluation of upland sources see Section 3.2.4 of the RI/FS Work Plan. As stated in USEPA *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (USEPA 2005), sources of contaminants to sediments must be controlled early and, if recontamination is likely to occur, then sources should be controlled prior to establishing end points and prior to the implementation of sediment remedies. Therefore, it is important to identify and control significant sources of contaminants to the Study Area prior to implementing an effective remedy.
3. Understand the key geomorphological, chemical, and biological processes affecting the stability of sediments and the fate, transport, and bioavailability of COPCs.
4. Identify complete and reasonably potentially complete (considering the urban nature of the Study Area and the impact of future contaminant loadings on the ecology and quality of the Study Area) exposure pathways and identify potential current and future human health and ecological risks posed by the COPCs present in the Study Area.
5. Identify and evaluate potential remedial actions that provide meaningful risk reduction and provide the highest, best possible use of the Study Area, considering

the urban nature of the Study Area and the impact of future contaminant loadings on the ecology and quality of the Study Area.

2.3 Cultural Resources Terminology

Various terms can be used to describe cultural resources. Those used in this plan are:

- **Historic Properties:** This term means “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places” (36 CFR 800.16(l)(1)). In this document, the term means resources that have been evaluated and determined eligible for listing in the National Register of Historic Places (National Register).
- **Cultural Resource:** This term means any archaeological or built environment resource, regardless of National Register Eligibility.
- **Built Environment Resource:** This includes buildings, bridges, foundations, walls, and other structures or objects constructed after Euroamerican contact and remaining above ground.
- **Archaeological Resource:** This includes archaeological sites and artifacts.

2.4 Objectives and Scope of the Stage IA Cultural Resources Survey

The Stage IA CRS will be completed in compliance with Section 106 of the National Historic Preservation Act (NHPA) (36 Code of Federal Regulations [CFR] Part 800), with the objective of identifying any National Register-eligible historic properties within or near the Study Area that might be affected by potential remedial actions. If these properties are present, the FS needs to consider whether feasible alternatives exist that would avoid such effects.

36 CFR Part 800 requires the establishment of proposed areas of potential effects (APE), defined as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties” (36 CFR 800.16(d)). The basis and extent of the proposed APE are described in Section 4. Should historic properties be identified, additional CRS stages will be required. These potential additional CRS stages are also described in Section 3.

3 REGULATORY FRAMEWORK

The Newtown Creek RI/FS is being conducted under the USEPA *CERCLA* program and, therefore, must meet the requirements of the applicable or relevant and appropriate requirements (ARARs). The USEPA guidance document *CERCLA Compliance with Other Laws Manual, Part II Clean Air Act, and Other Environmental Statutes and State Requirements* (USEPA 1989) describes how the effects of a *CERCLA* remedial action must consider impacts on cultural resources. This guidance document describes a process for compliance with the NHPA and defines the responsibilities of USEPA and other involved agencies (i.e., the State Historic Preservation Office [SHPO] and Advisory Council on Historic Preservation [ACHP]).

This section describes the process for cultural resources review and how it relates to remedy selection under *CERCLA*.

3.1 CERCLA Guidelines

Remedial actions performed under *CERCLA* are subject to the regulations set forth in the NHPA of 1966, as amended (regulations at 36 CFR Part 800 – Protection of Historic Properties). Under Section 106 of the NHPA, *CERCLA* remedial actions are required to take into account the effects of the remedial activities on any historic properties listed in or eligible for listing in the National Register.

CERCLA response actions are exempted by law from the requirement to obtain federal, state, or local permits (or documents similar to permits) related to any activities conducted completely within the established *CERCLA* site. Therefore, compliance with Section 106 of NHPA is not required for activities being conducted within the Study Area. However, this does not eliminate the requirement to meet (or waive) the substantive provisions of this ARAR.

3.2 Section 106 of NHPA

The primary law governing the preservation of cultural resources is Section 106 of the NHPA. In New York State, the Section 106 process is overseen by the New York State

Historic Preservation Office (NYSHPO). At the federal level, the Section 106 process is overseen by the ACHP.

Specifically, Section 106 of the NHPA requires that federal agencies take into account effects of their undertakings on historic properties. An undertaking is a project, activity, or program funded in whole or under jurisdiction of a federal agency, including those carried out on behalf of a federal agency, requiring federal financial assistance or requiring federal permits. In the case of the Newtown Creek RI/FS, the undertaking is the remedies evaluated in the FS.

In accordance with NHPA Section 106 and 36 CFR Part 60, all resources over 50 years old must be evaluated to determine if they meet specific eligibility criteria established by the National Park Service (NPS). Historic properties are considered eligible for the National Register if they meet one or more criteria for significance and retain integrity. Table 3-1 lists the National Register criteria for significance and associated criteria considerations, and Table 3-2 lists the aspects of integrity.

Section 106 applies to all resources already listed in the National Register, to resources formally determined to be eligible for listing, and to resources not formally determined eligible but that meet specified eligibility criteria. This means that resources that have not yet been listed, and even resources that have not yet been discovered, can be eligible for consideration under NHPA Section 106. This work plan describes a process to assess the potential for historic properties, in preparation for possible future efforts identifying and evaluating properties (see Sections 3.3.1, 4.4.1 and 5.2).

In addition to identification of cultural resources, the CRS must evaluate effects of potential remedies on National Register-listed and/or eligible resources. If adverse effects to National Register-listed and/or National Register-eligible cultural resources may occur as a result of a remedy, alternatives to avoid or minimize the impacts must be considered. If adverse effects cannot be avoided, measures must be developed and implemented to mitigate such effects.

3.3 New York State Historic Preservation Act

Section 14.09 of The New York State Historic Preservation Act of 1980 and its implementing regulations establish the State Register of Historic Places and require SHPO review of state agency projects that have the potential to cause a change in the quality of a property eligible for the register.

3.4 The CRS Process

“The CRS process is a staged investigation, narrowing in focus when specific resources are identified” (USEPA 1989). This is consistent with NYSHPO guidelines (NYSOPRHP 2005). The steps and decision points in the CRS process are provided in Figure 3-1 and discussed in more detail below. These steps can include the following:

- Stage I Survey:
 - Stage IA – Literature Search and Sensitivity Study
 - Stage IB – Subsurface Investigation
- Stage II Survey:
 - Determinations of National Register Eligibility
 - Assessment of Effects
- Development and Implementation of Mitigation Measures

The information obtained in the Stage IA Survey will identify if identified or potential historic properties are located in or near the Study Area. If identified or potential historic properties are present, the Stage IA Survey will provide the basis for deciding whether additional steps in the CRS process are required.

3.4.1 Stage I Survey

The Stage I Survey is conducted as early in the RI/FS as possible to determine whether historic properties may be present and, if present, to allow time for a Stage II Survey prior to end of the RI field work and the detailed evaluation of alternatives in the FS. The Stage I Survey is divided into two parts: a Stage IA Survey, which consists of a literature search and sensitivity study; and a Stage IB Survey, which most often consists of a field investigation.

3.4.1.1 *Stage IA: Literature Search and Sensitivity Study*

The Stage IA Survey, which is the subject of this CRS Work Plan, is the first step in the CRS process. This step includes research to identify any known or potential cultural resources within the APE. The steps taken for the Stage IA Survey include reconnaissance surveys, background research, and development of historical contexts (e.g., land use patterns and prehistoric and historic cultural development).

The Stage IA Survey provides the basis for identifying zones of cultural resource sensitivity.² Based on the information gained during Stage IA, the need for a Stage IB Survey is determined.

3.4.1.2 *Stage IB: Subsurface Investigation*

A Stage IB Survey may be undertaken when the results of the Stage IA Survey indicate that subsurface testing is required to determine the presence or absence of archaeological resources. The Stage IB Survey includes subsurface investigation to record and describe any archaeological resources and where they are located to facilitate plans for Stage II evaluation, if required. No artifacts will be collected during the Stage IB survey. Any artifacts encountered will be placed in labeled bags and returned to their original location.

3.4.2 *Stage II Survey: Site Definition and Evaluation*

If potential historic properties are identified during the Stage I Survey(s), a Stage II Survey may be required “to obtain detailed information on the integrity, limits, structure, function, and cultural/historical context of an archaeological site sufficient to evaluate its Potential National Register eligibility” (New York Archaeological Council 1994). During a Stage II Survey, data also may be collected on the significance and integrity of built resources sufficient to allow for the determination of the resource’s eligibility for listing in the National Register of Historic Places (36 CFR 60 [a-d]). Local professional expertise with specialized

² “The measure of the potential for the site to contain significant cultural resources” (New York Archaeological Council Standards Committee 2000).

knowledge related to archeological sites and the built environment will be used, as needed, in the assessment of the importance and measure of integrity for resources evaluated in the Stage II Survey. During the Stage II Survey, each identified cultural resource that may be affected by a remedial option being considered in the FS is evaluated. A Stage II investigation may include additional background research and subsurface investigation (e.g., using closer intervals and/or larger excavation) to establish a potential cultural resource's boundaries (New York Archaeological Council Standards Committee 2000).

The Stage II Report summarizes the results of the Stage II Survey and recommends whether any cultural resource meet one or more of the National Register eligibility criteria (NPS 1991). The Stage II Report also includes a discussion of the likely impacts of remedial options on any historic properties and provides recommendations for resource management or impact mitigation (New York Archaeological Council 1994).

A discussion of the likely impacts would include whether or not the historic property would be affected by remedial action. "An effect occurs when an undertaking may alter characteristics of the cultural resources that qualify it for inclusion in the National Register" (USEPA 1989). There are three types of determinations: 1) determination of no effect; 2) determination of adverse effect; and 3) determination of no adverse effect. If a remedial option will have no effect on historic properties, then no further CRS review is necessary. If it is determined that there will be an effect, then the Criteria of Adverse Effect³ are used to determine the effect. Based on the information and recommendations in the Stage II Report, USEPA, in consultation with NYSHPO, will make decisions on the National Register eligibility and potential impacts of remedial actions, as described below.

³ "An adverse effect is an effect on an historic property on or eligible for the National Register that may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects (*36 CFR section 800.9(b)*) include, but are not limited to, the following:

- Physical destruction, damage, or alteration of all or part of the property
- Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register
- Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting; neglect of the property resulting in its deterioration or destruction
- Transfer, lease, or sale of the property" (USEPA 1989)

3.4.2.1 *Determination of Eligibility*

Based on the results of a Stage II Survey, USEPA, in consultation with NYSHPO, will determine whether a cultural resource meets the criteria for inclusion in the National Register. The USEPA and NYSHPO will then prepare the required documentation for inclusion according to the Department of Interior Regulations (and as specified in 36 CFR Part 63) and forward it to the Keeper of the National Register.

3.4.2.2 *Impact Evaluation*

Following the Stage I and Stage II Surveys the potential effects of remedial options on identified historic properties will be evaluated. If a remedial option will have no effect on historic properties, then no further review is necessary. If it is determined that there will be effects, then whether or not the effects will be adverse effects will be determined in accordance with 36 CFR Section 800.9(b). If there will be no adverse effects, documentation of the evaluation process will be prepared and submitted to the ACHP. If there will be adverse effects, then proposals to avoid or mitigate the adverse effects will be evaluated including other remedial options.

3.4.3 *Mitigation Plan*

In the event that it is determined that an effect on an historic property cannot be avoided, a plan to minimize these effects will be developed for review by USEPA (in conjunction with NYSHPO, ACHP, and other consulting parties [see Section 4.2 for a discussion of consulting parties], as required). The Mitigation Plan will outline activities to mitigate the effects of the remedial action (e.g., through redesign, reduction of direct impact on the resource, and/or data recovery prior to construction). The Mitigation Plan will be included in a Memorandum of Agreement (MOA) between USEPA and ACHP.

Table 3-1
Criteria for Historic Significance

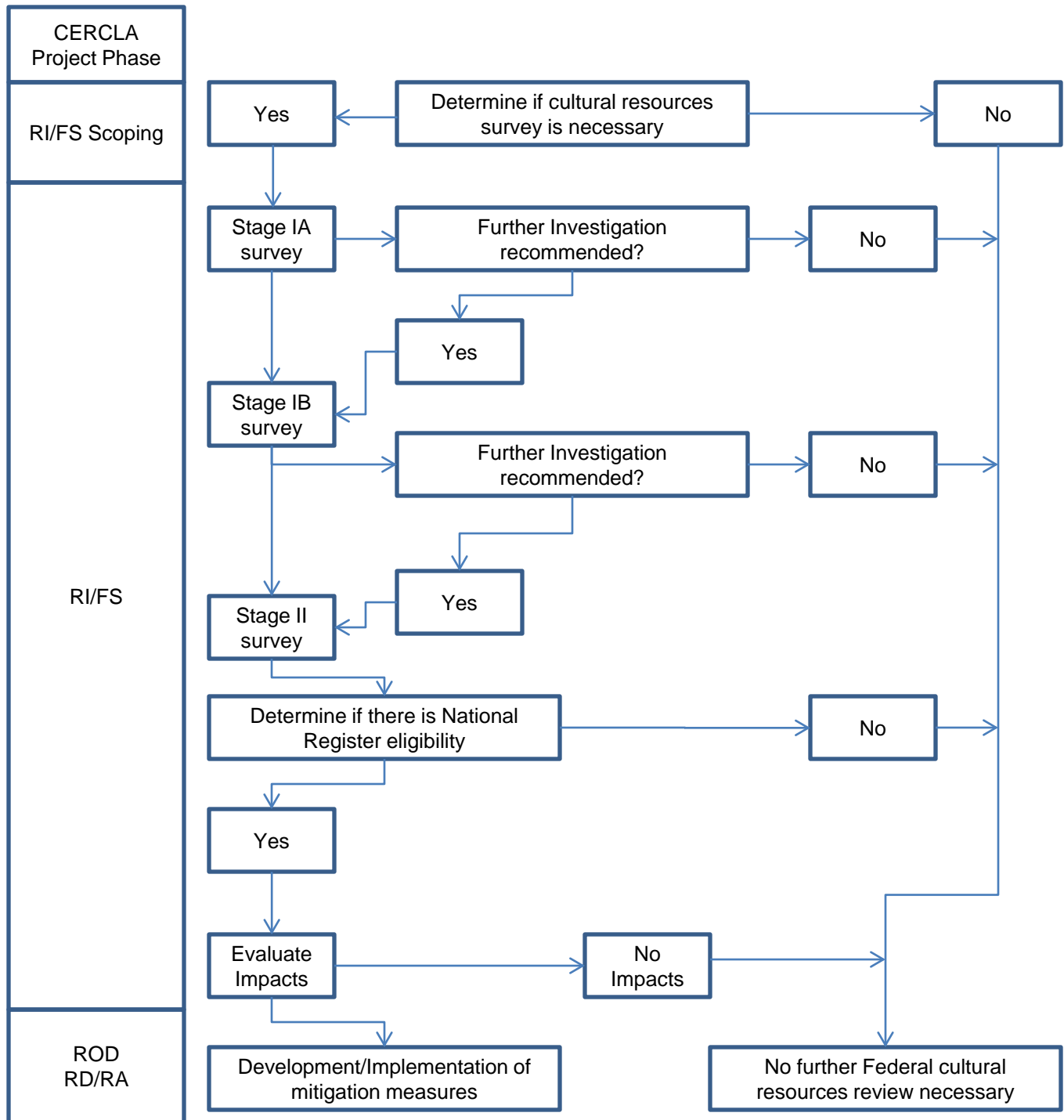
Source: 36 CFR 60.4, Part I	
<p>The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:</p>	
A.	That are associated with events that have made a significant contribution to the broad patterns of our history; or
B.	That are associated with the lives of persons significant in our past; or
C.	That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D.	That have yielded, or may be likely to yield, information important in prehistory or history.
Source: 36 CFR 60.4, Part II	
<p>Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria, or if they fall within the following categories, or criteria considerations:</p>	
A.	A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
B.	A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
C.	A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
D.	A cemetery which derives its primary significance from graves or persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
E.	A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
F.	A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
G.	A property achieving significance within the past 50 years if it is of exceptional importance.

Table 3-2
Integrity Aspects Defined

Aspect of Integrity	Property Attributes
Location	Must not have been moved.
Design	Must retain historic elements that create the form, plan, space, structure, and style of the property.
Setting	Setting must retain its historic character.
Materials	Must retain the key exterior materials dating from the period of its historic significance.
Workmanship	Methods of construction from its time of significance must be evident.
Feeling	Physical features must convey its historic character.
Association	Must be the actual place where a historic event or activity occurred and must be sufficiently intact to convey that relationship to an observer.

Note:

Source: US Department of the Interior, 1991.



Source: Modified after Exhibit 4-1 in USEPA, 1989. CERCLA Compliance with Other Laws Manual: Part II. Clean Act and Other Environmental Statutes and State Requirements. EPA/540/G-89/009, OSWER Directive 9234.1-02. August.

4 CRS STAGE IA ACTIVITIES

This section summarizes the activities that will be conducted as part of the CRS Stage IA. There are five major tasks that will be conducted as part of the Stage IA Survey:

- Developing the APE
- Identifying consulting parties
- Conducting background research
- Conducting reconnaissance site visit/survey
- Developing contexts for the archaeological and built environment survey

4.1 Developing the APE

Under the NHPA Section 106, USEPA is required to define the APE, including consideration of direct and indirect effects. Direct effects may include physical destruction to all or part of a resource. Indirect effects may include the introduction of visual, atmospheric, or audible impacts that may diminish the resource's integrity. For the Newtown Creek RI/FS, the undertaking is each of the potential remedies evaluated in the FS.

The APE includes a proposed archaeological resources APE and built environment APE because the scale of potential effects is different for those two types of resources. Both APEs are included in this CRS Work Plan, as discussed below, and as shown in Figures 4-1 and 4-2, respectively. USEPA, in consultation with NYSHPO, will review and confirm the limits of the proposed APE to determine whether or not it is appropriate for the CRS Stage IA (archaeology and historic resources). The APE will also be further refined following: 1) the reconnaissance survey described below; and 2) ongoing design decisions that include unavoidable impacts along the creek shoreline. These recommendations for APE modifications would be documented in memoranda to USEPA following the reconnaissance survey, prior to conducting more intensive background research, and/or before cleanup activities begin. USEPA approval will be required for APE revisions.

4.1.1 Archaeological APE

Archaeological resources are subject to direct effects as a result of implementation of a remedial option because sites may be disturbed by excavation. Indirect effects to

archaeological sites would not be expected. Therefore, archaeological resources APE is limited to the Study Area, surrounding shoreline that may be impacted by a remedial option and any staging or processing areas. With the exception of the bulkheads above the water line, potential archaeological resources are, for the most part, buried under sediment and are not visible at the Study Area sediment or water surface. Therefore, potential remedies that require or result in subsurface sediment disturbance have the potential to impact archaeological resources. Project actions that have the potential to impact archaeological resources include dredging and bulkhead removal or alteration. The proposed archaeological APE for the current project includes the channels and bulkheads of Newtown Creek and its tributaries, with a 50-foot buffer inland from the bulkhead, riprap, or gravity wall line (to ensure that the entire bulkhead area is included). Figure 4-1 depicts the proposed archaeological APE. As described in Section 4.1, the APE may be revised based on research results or design decisions. USEPA approval will be required for APE revisions.

4.1.2 Built Environment APE

Historic built environment resources are subject to both direct and indirect effects as a result of the implementation of a remedial option. Built environment resources may include buildings, bridges, walls, or other structures. The remedies that have the potential to impact built environment resources may be similar to those described above for archaeological resources. Direct effects on a built environment resource are defined as those that result from remedy implementation that may cause physical destruction or alteration to all or part of the resource. In addition, project actions may result in indirect effects. Indirect effects are the introduction of visible and/or audible elements that may diminish the integrity of the resource. Therefore, the proposed built environment APE for the Newtown Creek RI/FS will encompass properties that are within and immediately adjacent to (i.e., within sight of) the Study Area. The Built Environment APE includes each tax parcel with a structure visible from the Study Area. This ensures that if one of a group of related structures on a parcel is affected, the effects on the group are taken into account. The proposed Built Environment APE is depicted in Figure 4-2.

The properties immediately adjacent to the Study Area are generally large industrial parcels and, therefore, the APE will likely be ample to take into account direct and indirect effects associated with potential remedial options. As described in Section 4.1, the APE may be

revised based on research results or design decisions. USEPA approval will be required for APE revisions.

4.2 Identification of Consulting Parties

According to 36 CFR 800.2, the USEPA is required to involve consulting parties in the review of CRS documents and in the findings and determinations made as a part of the CRS process. According to 36 CFR 800.2, consulting parties include the NYSHPO, Native American tribes, representatives of local governments, and local organizations and individuals with interest in the Study Area, such as the NYC Landmarks Preservation Commission (LPC). In addition, the ACHP, who provides guidance and generally oversees the operation of the NHPA Section 106 process, would also be invited to participate as a consulting party.

The consulting parties will be proposed in a memorandum submitted to USEPA prior to completion of the Stage IA Report. Following review and approval of the proposed list of consulting parties by USEPA, NYSDEC, and NYSHPO, letters will be prepared inviting these organizations and individuals to become consulting parties for this project.

4.3 Reconnaissance Site Visit/Survey

A reconnaissance site visit or survey is the first step of the Stage IA archaeological and built environment surveys. The purpose of the site visit is to document existing conditions and to identify areas of focus for more intensive background research. Data compiled during the reconnaissance survey also will be used to determine the adequacy of the APEs and to develop recommendations for APE modifications based on field observations.

As the proposed archaeological APE is confined to the waters of Newtown Creek and its tributaries and a 50-foot buffer inland from the Study Area boundary, it is anticipated that the background research portion of the CRS will be of greater value toward an understanding of potential archaeological resources within the Study Area than the site visit. However, the visual site survey will aid in the development of the prehistoric and historic contexts of the Study Area. Site survey will also assist in determining where disturbance has impacted archaeological potential.

The purpose of the reconnaissance survey of the built environment APE is to identify resources more than 50 years old that appear to meet the criteria for historic significance as described in Table 3-1 and retain integrity as described in Table 3-2. Based on the nature of the Study Area, it is anticipated that resources within the APE may include, but are not limited to, industrial buildings and structures and vehicular and railroad bridges. The purpose of the reconnaissance survey of the archaeological APE is to identify landforms that may indicate archaeological potential, areas of clear disturbance, and locations where subsurface testing would be desirable and possible. The survey will be conducted by boat and, where accessible, by land.

4.3.1 Boat-Based Survey

The visual reconnaissance survey by boat will cover the entire Study Area. Prior to the survey, the following activities will be conducted:

- Compilation of aerial photograph base maps for use during the surveys (one set for the archaeological survey and one set for the architectural survey), supplemented by historic maps where appropriate
- Ensuring that required permits and notifications for the work within the Study Area have been submitted and approved for the day's activities
- Implementing relevant provisions of the Health and Safety Plan (HASP)

It is anticipated that the boat survey will be conducted by two archaeologists and two architectural historians who will meet all applicable health and safety requirements as specified in the HASP (Anchor QEA 2011a). These staff will check in with the RI Manager or a designee twice each day: once before field operations to confirm the schedule and location to be surveyed; and again at the end of the days field operations. The staff will ensure they have the appropriate survey and communications equipment. In addition to the initial health and safety meeting conducted with the staff prior to the survey, daily health and safety meetings will be performed by the boat captain prior to boarding the boat. Prior to leaving the dock, the staff will confirm that the captain has completed an inspection of the boat, including an inventory of required safety gear (i.e., personal floatation devices, radios, etc.), has conducted a communications check, and has filed a float plan.

Relevant archaeological conditions will be noted in field books and on aerial photograph base maps during the boat-based visual survey. Photographs will be taken and recorded on a photograph log. The following conditions will be documented during the survey:

- Location, condition, and extent of known sites in the project area (if any)
- Past and current land uses
- Topography, vegetation, and hydrology
- Nature and extent of historic and modern ground disturbance
- Evidence of prehistoric and/or historic activity
- Notes on any areas where conditions preclude assessment of the APE

Architectural resources more than 50 years old that appear to meet the criteria for historic significance (see Table 3-1) and retain integrity (see Table 3-2) will be recorded in field books and on aerial photograph base maps. Aspects of the landscape that may affect archaeological potential will also be described and recorded. Photographs will be taken and recorded on a photograph log.

Following the survey, the field records will be scanned and added to the electronic project files as specified in the Data Management Plan (Anchor QEA 2011b). Data collected will be reported to the Project Quality Assurance (QA) Coordinator, who will review it for completeness and accuracy.

4.3.2 Land-Side Survey

The land-based survey will be conducted for those landside areas that are accessible to the public. Pre-survey activities that will be completed prior to initiating the land-side survey include:

- Ensuring that any required notifications and access for the work have been submitted and approved for the day's activities
- Implementing relevant provisions of the HASP

The survey staff will be in communication with the RI Manager or a designee during survey activities, and will check in with the RI manager at the end of each day's field activities. The

staff will meet all health and safety requirements as specified in the HASP (Anchor QEA 2011a).

On each day of the land-side survey, the designated survey staff will check in with the RI Manager or a designee to confirm the schedule and area to be surveyed and ensure that they have the appropriate survey and communications equipment. A health and safety meeting will be conducted by the survey staff daily before the start of work.

During the land-side survey, architectural resources more than 50 years old that appear to meet the criteria for historic significance (see Table 3-1) and retain integrity (see Table 3-2) will be recorded in field books and on aerial photograph base maps. Aspects of the landscape that may affect archaeological potential will also be described and recorded. Photographs will be taken and recorded on a photograph log.

Following the survey, the field records and map notations will be scanned and added to the electronic project files as specified in the Data Management Plan (Anchor QEA 2011b). Data collected will be reported to the Project QA Coordinator, who will review it for completeness and accuracy.

4.4 Background Research

Background research will be conducted by archaeologists and architectural historians. This research will involve review of data gathered as part of the historical data review component of the RI/FS. This information is anticipated to include Sanborn Fire Insurance maps, aerial photographs, water well maps, and industrial atlases, as well as other historical maps, atlases, and images, and any information gathered on the history and development of the Study Area and surrounding uplands. Previous work related to comparable urban canal settings, including survey work undertaken within New York City, will also be reviewed at the New York City Landmarks Preservation Commission and the New York State Office of Parks, Recreation and Historic Preservation.

In addition, background research for additional sources not collected as part of the historical data review will be conducted by the archaeologists and architectural historians at local repositories, including but not limited to, the following:

- Local History Division and Map Division of the New York Public Library, Main Branch/42nd St., New York
- New York Department of Records and Information Services, New York
- New-York Historical Society, New York
- Long Island Division of the Queens Borough Public Library, Central Branch, Jamaica
- Brooklyn Public Library, Central Library, Brooklyn Heights, New York
- Brooklyn Historical Society and Library, Brooklyn Heights, New York
- Queens Historical Society, Flushing, New York
- Newtown Historical Society, Ridgewood, New York
- LaGuardia and Wagner Archives, LaGuardia Community College, Long Island City, New York
- City Hall Library and Municipal Archives, Chambers Street, New York
- Queens Borough President's Office, Topographic Bureau, Queens Blvd., Kew Gardens, New York
- Brooklyn Borough President's Office, Topographic Bureau, Borough Hall, Joralemon St., Brooklyn Heights, New York

Online resources will be searched as warranted and to supplement information collected from the above local repositories. In addition, local professional archaeologists and historians will be consulted to identify additional archival repositories, as appropriate.

Archival data and previous investigations will then be analyzed to develop the historic contexts appropriate to the identification and evaluation of associated cultural resources. These historic contexts will identify the major period of development, significant historic themes, and the range of potentially associated cultural resources within the APE for each discipline.

Data will be collected as specified in the Data Collection Plan (Anchor QEA 2011c) for inclusion in the historical data repository. Data will be managed and evaluated as specified in the Data Management Plan (Anchor QEA 2011b). Data collected will be reported to the Project QA Coordinator, who will review it for completeness and accuracy.

4.4.1 Archaeological Resources

Stage IA archival, documentary, and cartographic research will be conducted in order to assess the archaeological sensitivity of the Study Area with regard to prehistoric and historic resources. Research will be conducted to gain an understanding of the environmental and cultural history of the area, and to aid in developing prehistoric and historic contexts against which the significance of potential archaeological resources may be measured. Components of the background research include the following:

- Literature review of primary and secondary sources, published and archival, of relevance to the history and development of Newtown Creek and its tributaries.
- Archaeological site file search conducted at NYSHPO for previously identified archaeological sites within a 1-mile radius⁴ of Newtown Creek and its tributaries, and to document the National Register status of the sites, if previously evaluated for the National Register.
- Review of prior archaeological surveys in the general vicinity of the current study area that are on file at the NYSHPO, United States Army Corps of Engineers, or the LPC.
- Cartographic review to document land use through time for Newtown Creek and its tributaries and to document the transformation of a natural drainage system into an engineered and institutionalized waterbody that has been dredged and channelized since the late 19th century.
- Prior disturbance characterization including review of USEPA and NYSDEC documents regarding past dredging activities that may have compromised the integrity of archaeological resources that may once have been present in the current APE.
- Review of geophysical data collected as part of the RI/FS.

⁴ The 1-mile radius search for previously-identified sites around the Study Area is the area specified in Section 6.6.1 Background Research of the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (New York Archaeological Council 1994).

4.4.2 Built Environment Resources

The Stage IA research conducted for the built environment resources component will include identification of National Register-listed and eligible resources and locally designated resources within the APE. National Register-listed and eligible resources will first be identified through research on NYSHPO's online applications, including the State Preservation Historical Information Network Exchange (SPHINX) and Document Imaging for the National Register. Research will also be undertaken at NYSHPO offices to gather additional information about National Register-eligible resources. NYC LPC files will also be consulted to determine if there are any NYC LPC-designated resources, or resources calendared for consideration, within the APE. The data collected from the repositories listed in Section 4.4 will also be reviewed. This information will assist in the preliminary evaluation of the potential significance of built environment resources more than 50 years old identified during the reconnaissance surveys.

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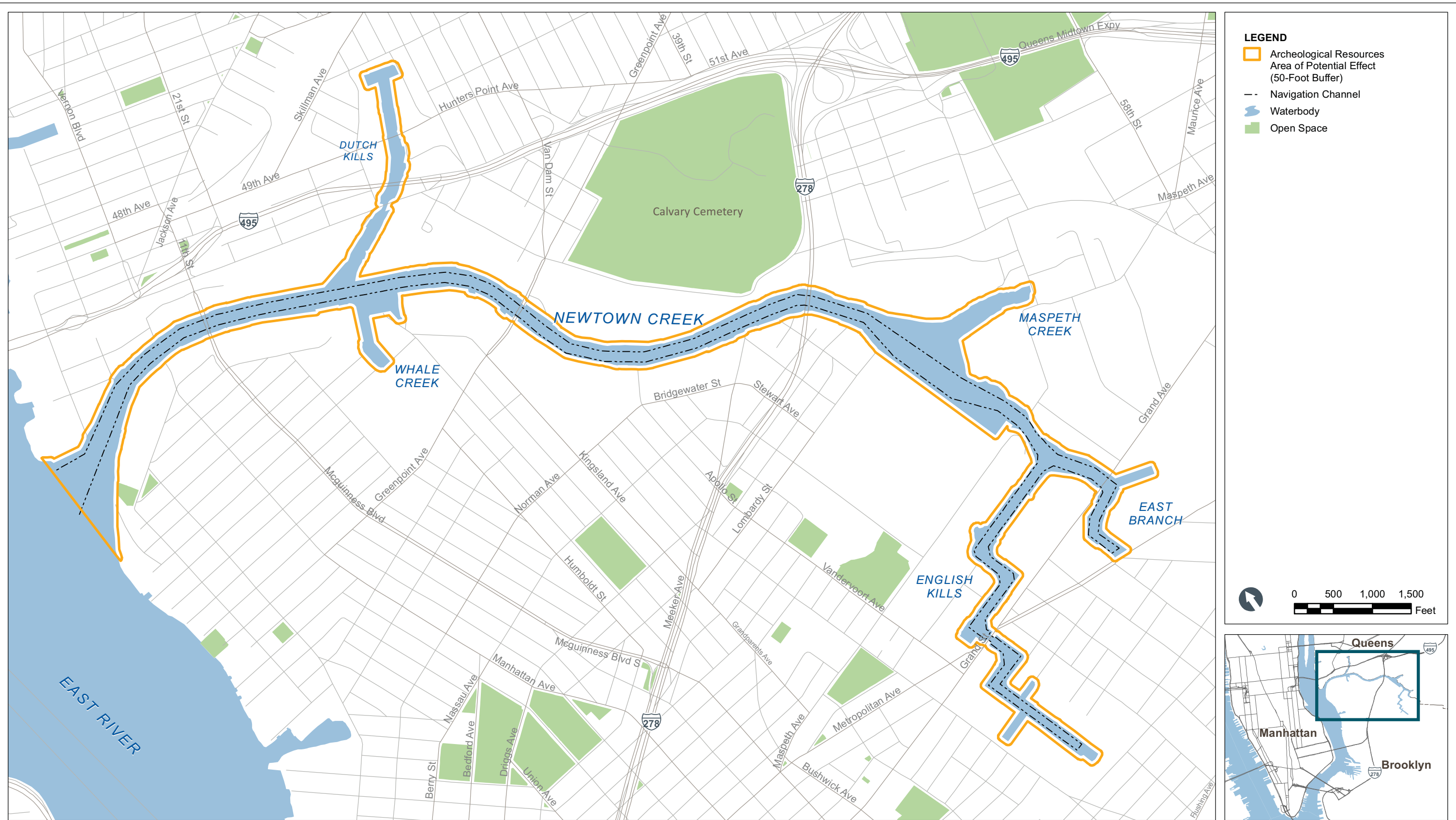


Figure 4-1
Proposed Archaeological Resources Area of Potential Effects
Cultural Resources Survey Work Plan
Newtown Creek RI/FS

Q:\Jobs\110782-01 NewtownCreek\Maps\2011 Plans\CRS\IAQ CRS Figure 4-2 Proposed Built Environment Area of Potential Effects.mxd | oliver 8/17/2011 12:56:59 PM

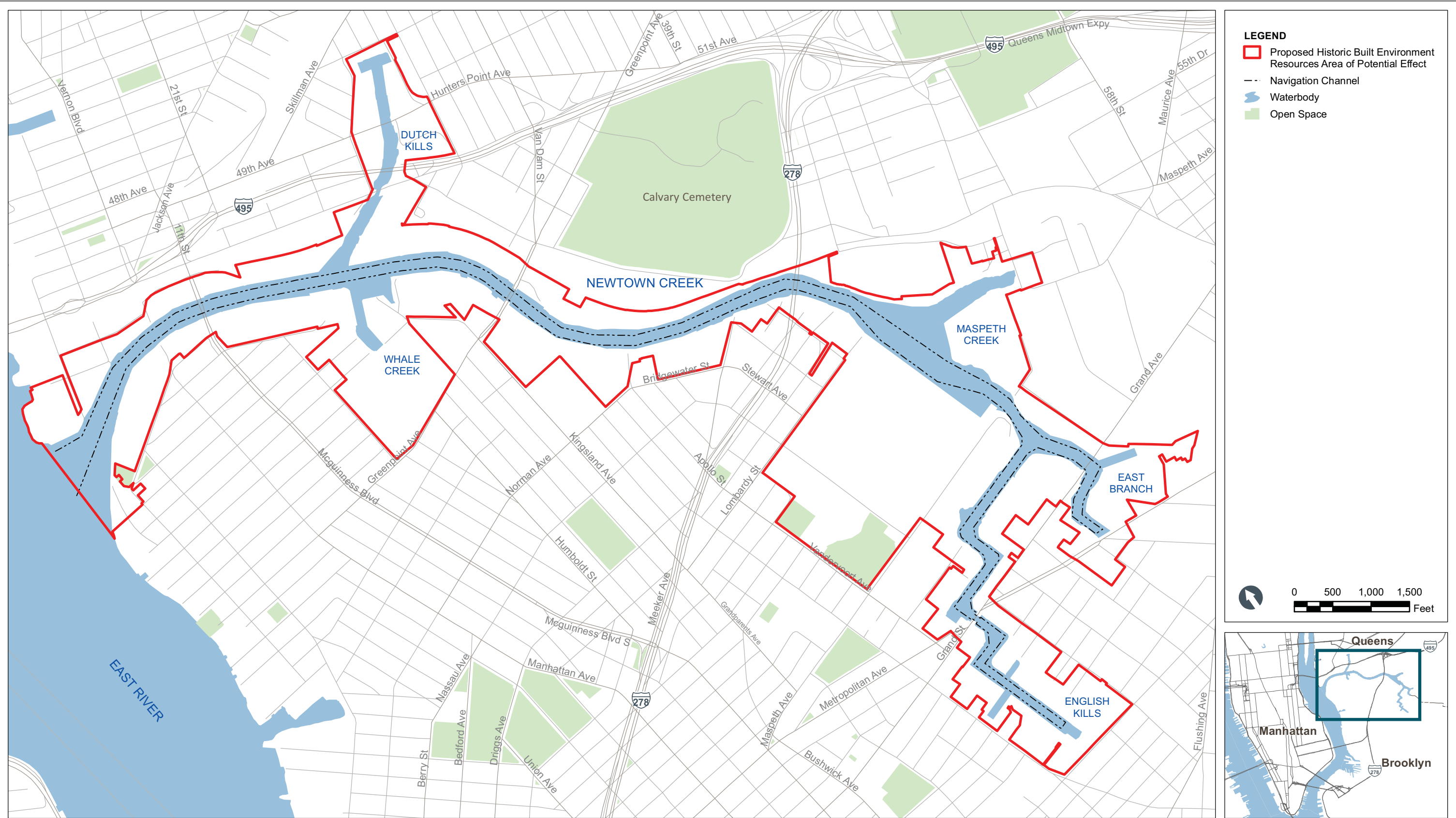


Figure 4-2
Proposed Built Environment Area of Potential Effects
Cultural Resources Survey Work Plan
Newtown Creek RI/FS

5 CRS REPORTING

The results of the cultural resources survey will be included in a combined CRS Stage IA Report. The content of the report and the implications of findings are described in this section.

5.1 CRS Stage IA Report Content

The report will include the following components:

- Description of the project, regulatory context, and consultation activities
- Description of existing and prior environmental conditions
- Prehistoric and historic context
- Previous research, including recorded archaeological sites and built environment resources, and previous cultural resources surveys
- Survey methodology
- Results of archaeological survey
 - Cartographic analysis
 - Prior disturbance characterization of the Study Area, including historic and modern dredging activities
 - Summary of geophysical surveys
 - Assessment of archaeological potential
- Results of built environment survey
 - Summary of resources that appear to potentially be eligible for the National Register
- Recommendations as to whether further cultural resources investigations are necessary, and why.

5.2 Implications for Identification of Cultural Resources

As described in Section 3, the CRS Stage IA Report will identify whether or not future archaeological and historic architectural investigations are needed. In terms of archaeological resources, if areas of archaeological potential are defined within the APE, then future steps may include a scope of work for a Stage IB Survey, as described in

Section 3. In terms of built environment resources, future steps may include the preparation of NYSHPO inventory forms to evaluate the National Register-eligibility of any resources that may have been preliminarily identified as part of the CRS.

6 STAFFING AND SCHEDULE

This section describes the roles and responsibilities of those individuals conducting the CRS and the schedule for the CRS Stage IA.

6.1 Roles and Responsibilities

The CRS will be undertaken by archaeologists and architectural historians that meet the Secretary of Interior's Professional Qualifications Standards for Archaeologists and Architectural Historians (36 CFR Part 61, Appendix A).

The Anchor QEA team personnel in the following roles have a primarily responsibility for the CRS:

Title	Name
Project Manager	James Quadrini, P.E., BCEE
RI Manager	James Keithly
CRS Archaeologist	James S. Schmidt
CRS Architectural Historian	Kathryn M. Kuranda
Historical Data Review Task Manager	Keith Pine
Project Quality Assurance Coordinator	Leslie McKee

Responsibilities by title are described below:

- Project Manager – Responsible for overseeing each of the tasks identified in the RI/FS Work Plan (AECOM 2011), including the CRS.
- RI Manager – Responsible for scoping and implementing the RI, including reviewing and evaluating data collected as part of the CRS to inform the RI activities. Reports to the Project Manager.
- CRS Archaeologist – Responsible for scoping and implementing the archaeological aspects for the CRS. Reports to RI Manager.
- CRS Architectural Historian – Responsible for scoping and implementing the built environment aspects for the CRS. Reports to RI Manager.

- Historical Data Review Task Manager – Responsible for overseeing the collection and management of historical data to support RI/FS, including the CRS. Reports to the Project Manager.
- Project QA Coordinator – Responsible for reviewing project plans and revisions to the plans to maintain proper QA throughout the investigation. Also responsible for data quality review for data collected as part of the RI/FS. Reports to the Project Manager.

6.2 Schedule

The CRS Stage IA will be conducted at the beginning of the RI/FS, concurrent with the Stage I RI Field Program and following USEPA and NYSHPO approval of the CRS Work Plan and the APE. Approval of the Work Plan and APE is anticipated February 14, 2012.

The CRS Stage IA will utilize the data collected as part of the aerial and hydrographic surveys conducted of the Study Area and the historical data review (as described in Section 4 of the RI/FS Work Plan [AECOM 2011]). The aerial survey photographs will serve as the base maps for the CRS Stage IA, and the historical data review will provide background research. Once USEPA and NYSHPO have approved the APE proposed in this CRS Work Plan and the aerial photograph base maps are prepared, the reconnaissance surveys will be conducted. At the same time, the list of consulting parties will be prepared. Limited background research will be conducted to identify preliminary areas with potential for cultural resources. Following the reconnaissance surveys, more intensive background research will be conducted regarding areas determined to have elevated potential for cultural resources during the reconnaissance survey.

These activities will be summarized, along with recommendations for additional work, if needed, in the CRS Stage IA Report, which will be submitted at the mid-point of the Stage I RI Field Program. The report is expected to be approved by USEPA in its final form on July 12, 2012.

7 REFERENCES

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